

Regional Water Authority's Use of Technology to Improve Watershed Inspections

Presented by:

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Watershed Inspector Training

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Overview of Today's Presentation

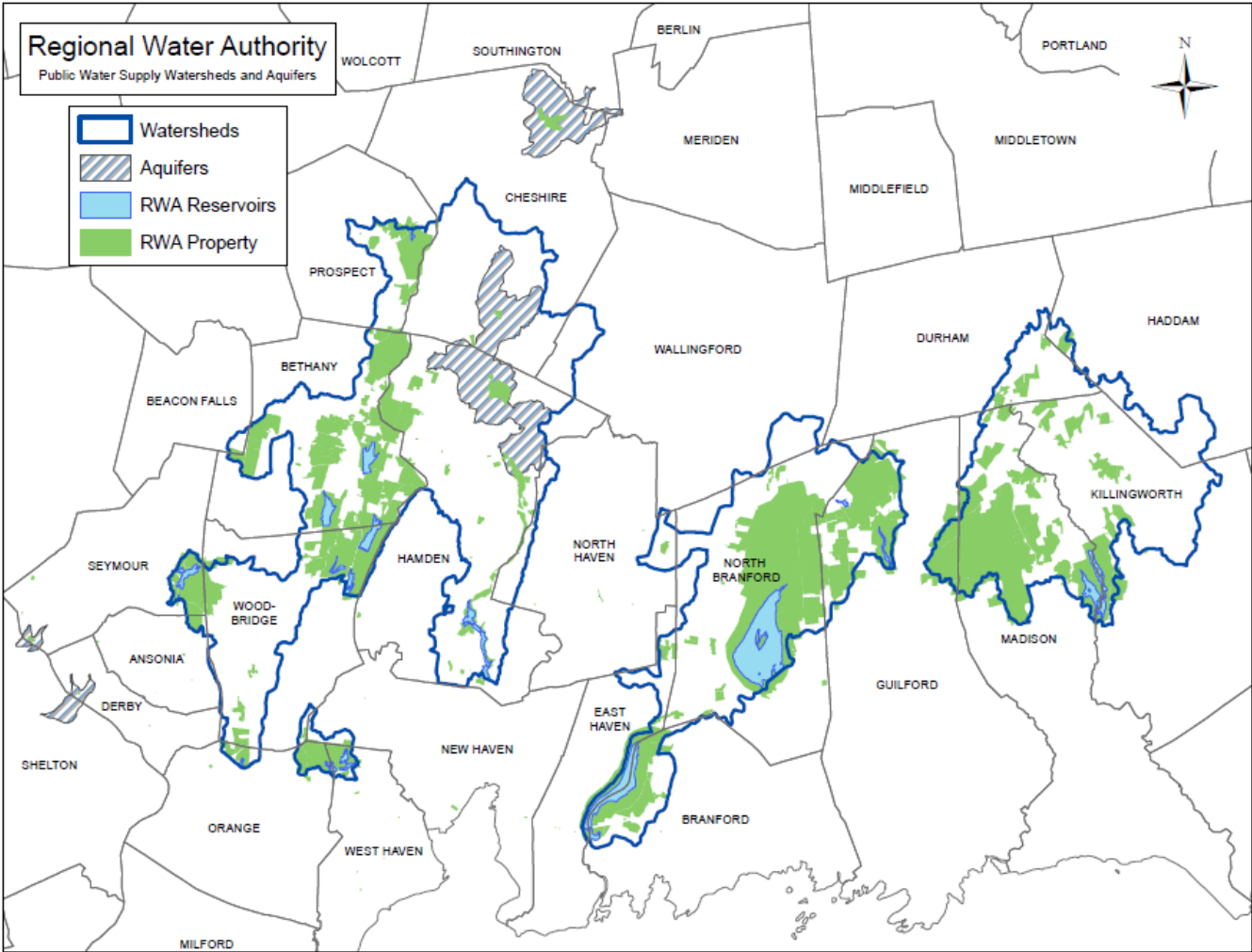
- RWA by the numbers
- Watersheds and APA's
- RWA's prioritization guidelines
- In house inspection application
- Crystal Reports
- GIS tracking, high risk and PFAS
- Alternatives to advanced technology



RWA By the Numbers

- Average 45 Million Gallons of Water Per Day
- Serve ~430,000 Customers; 15 municipalities
- Ten active reservoirs
- Four surface water treatment plants
- Seven wellfields
- Maintain 1,700 miles of pipe
- Own over 27,000 acres of land
- 60+ miles of recreational trails
- Hazwaste Central





Watershed Inspection Program

- 140 square miles of aquifers and watersheds
- Over 50,000 inspection sites
- Over 280 high risk sites
- Over 150 garages and gas stations
- I-95 crossing over a reservoir
- Sanitary sewer system bypasses
- Trap rock quarry





Lake Whitney: Hamden, CT



Lake Dawson, Glen, Watrous:
Woodbridge, CT



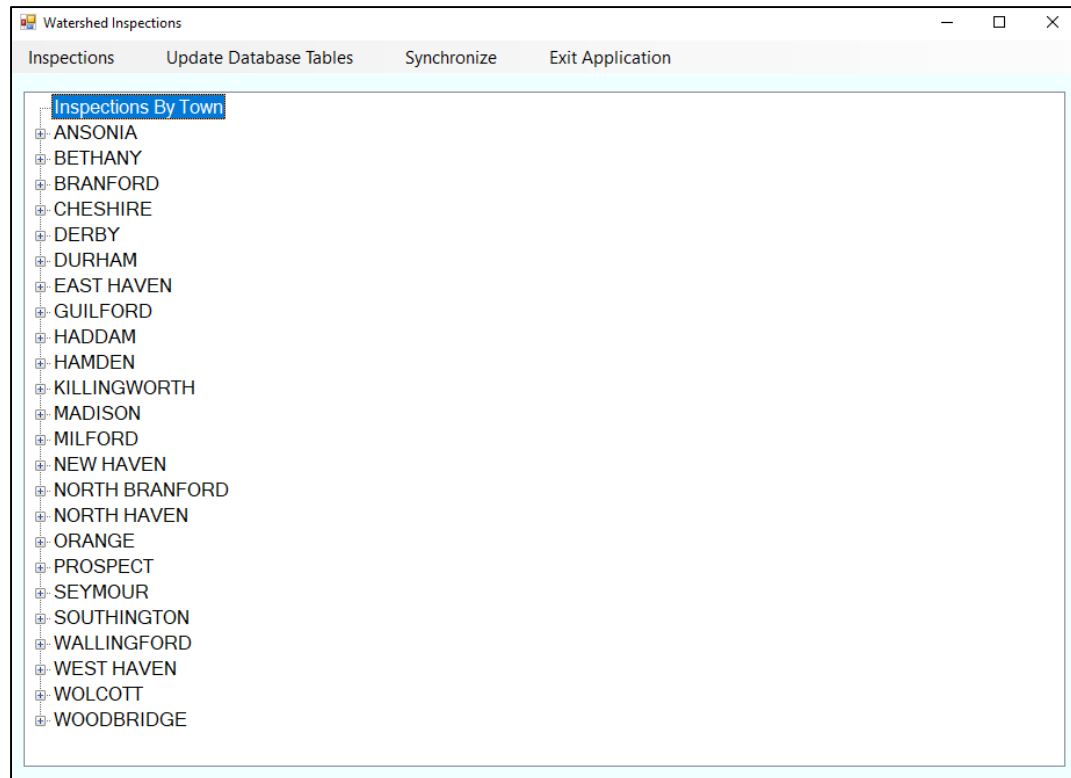
RWA Watershed and Aquifer Inspection Prioritization Guidelines

- A – Imminent threats to water quality.
- B – Activities identified as having high risk characteristics, such as those identified in CTDPH Source Water Assessment Program (SWAP) reports and Regulated Activities specified in the Connecticut State Aquifer Protection Regulations.
- C – Medium risk activities such as certain commercial uses, restaurants, and storm water management systems.
- D – Low risk activities such as residential properties, and retail and office space.



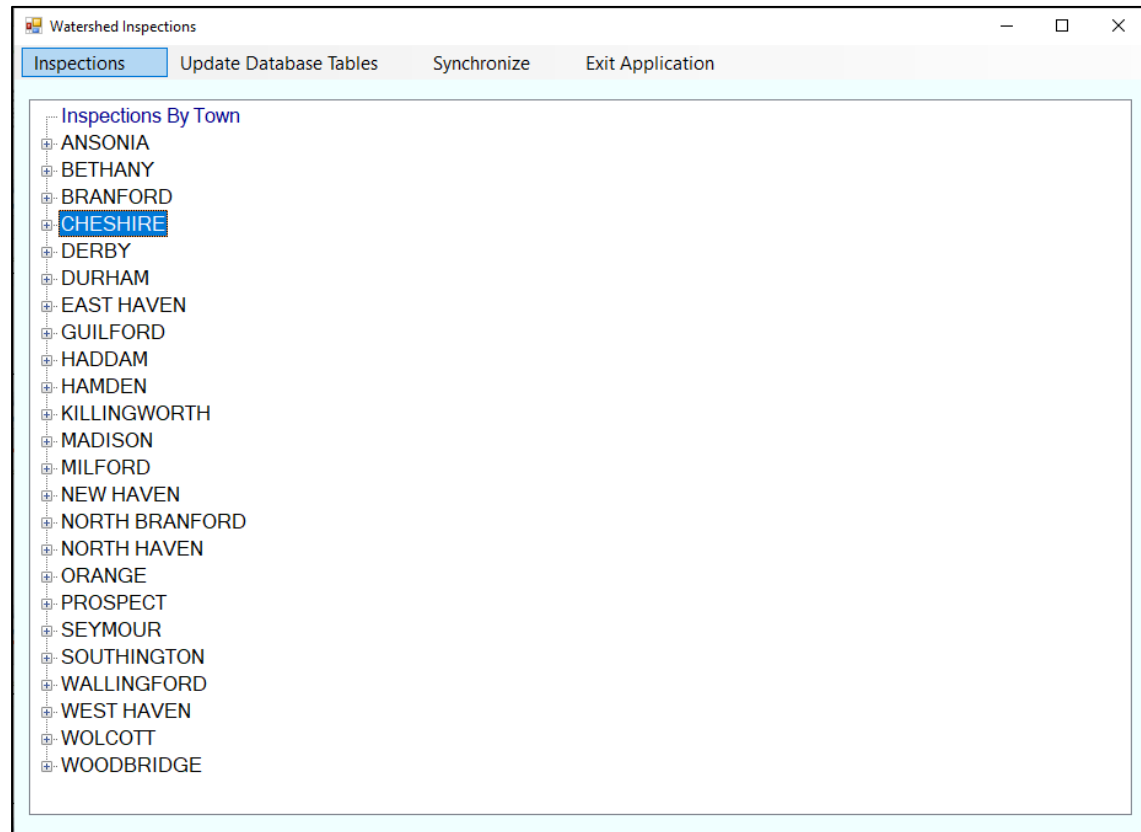
In-House Watershed /Aquifer Inspection Application

- Created by RWA IT department
- Functionality has improved over time
- Includes almost all inspection sites on RWA watersheds and APA's



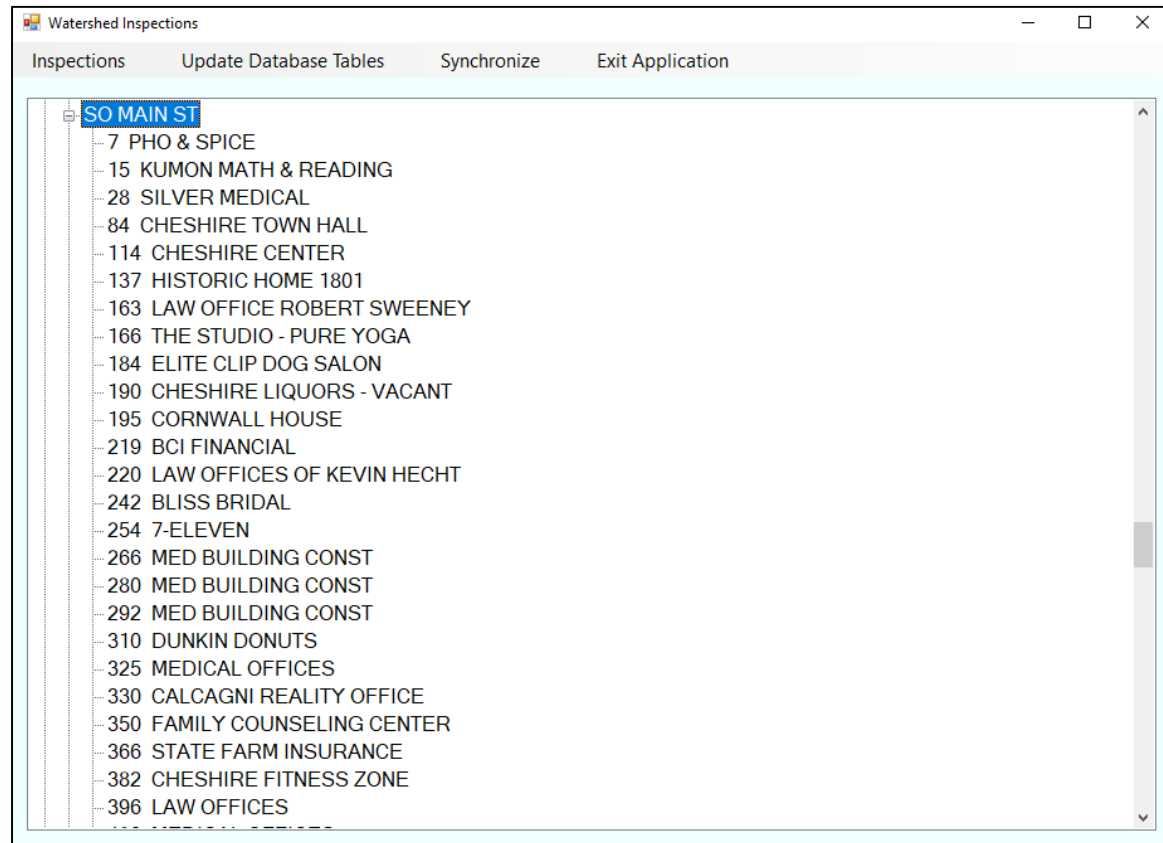
In-House Watershed /Aquifer Inspection Application

- Select town



In-House Watershed /Aquifer Inspection Application

- Select road



In-House Watershed /Aquifer Inspection Application

- Select address
- Fields automatically populate
- Enter inspection details in comments section

Inspection Maintenance - Create New Inspection Information For: SO MAIN ST

EXIT UPDATE PREV

Location

Town: CHESHIRE Street: SO MAIN ST Street List: SO MAIN ST Street Number: 849-2

Search Scroll Clear Search

Violations

- 001 A DOMESTIC WASTE OVERFLOW EXISTS
- 002 ANIMAL WASTES WERE WASHING TO SURFACE WATER
- 003 UNCONTROLLED SOIL EROSION EXISTS
- 004 IMPROPER DISPOSAL OF REFUSE EXISTS
- 005 MANUFACTURING WASTE SPILLAGE EXISTS

Violation Associated to Inspection

Inspection Data

Water System: MILL RIVER Water Shed: SOUTH CHESHIRE Last Inspection Date: 06/27/2019 Last Inspector: SJV

Business Description: VEHICLE REPAIR Resident - Company: DOWLING FORD AUTO BODY GARAGE

Land Use: B Interviewee: Current Inspector: SJV Current Inspection Date: 09/12/2019

Hazard Chemical Storage

Comments

SJV - Inspection with Bob. FD sealed, used to lead to drywell for Waterbury Door and Academy Ford back in the 70s. DEEP mandated to remediate and fill in the drywell a few years ago. 3 USTs removed from site (including 1 from Thomoston Feed) 3 years ago.

Fuel Type: Oil UST-#2 OIL-1000 GAL WEST OF BLD

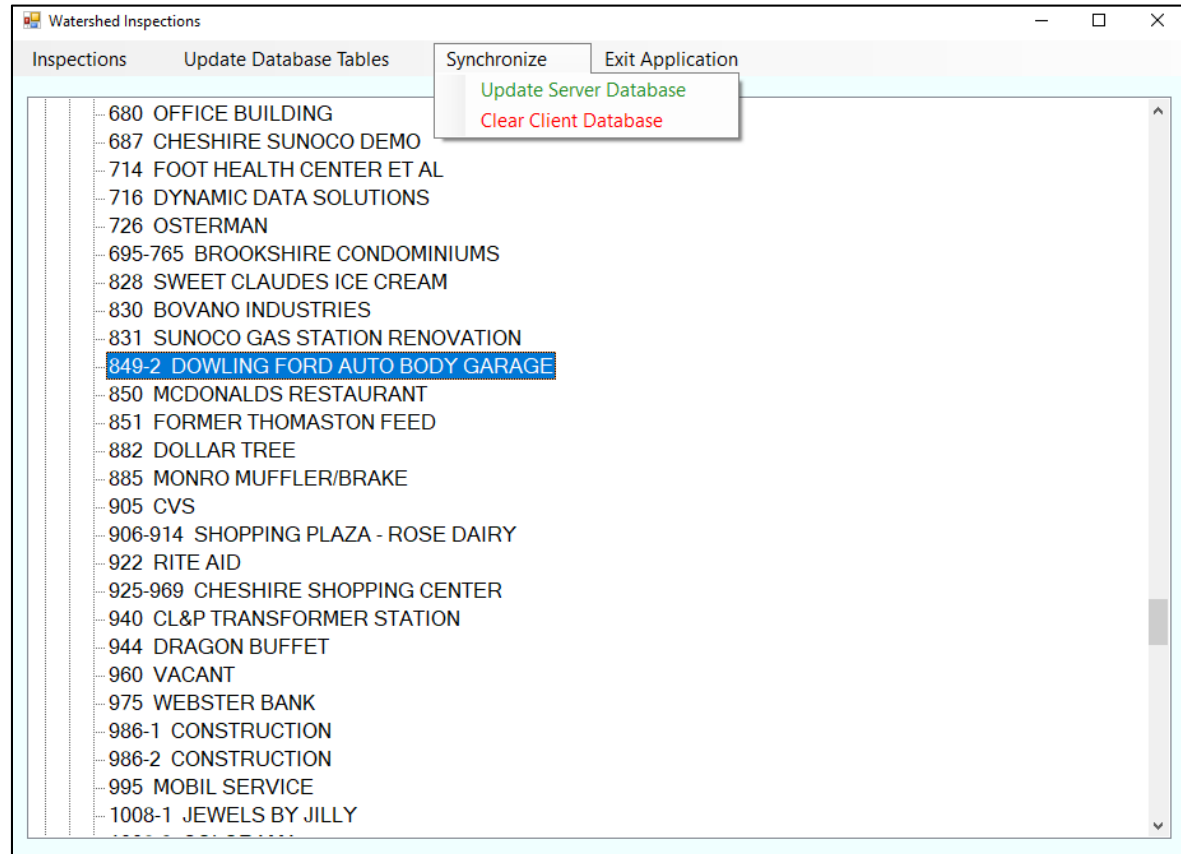
Water Type: PUBLIC

Waste Water Type: SEWER TRENCH DRAIN WITH DISCHARGE S



In-House Watershed /Aquifer Inspection Application

- Sync newly added inspection records
- This data gets automatically transferred to Crystal Reports



**REGIONAL WATER AUTHORITY
2019 STATE SITE INSPECTION REPORT
WATER SYSTEM: MILL RIVER**

Address	Town Code	Resident	Number of Inspections	Insp Date	Cumulative Violations	Remaining Violations
382 SO MAIN ST	025	CHESHIRE FITNESS ZONE	1	06/27/2019		
396 SO MAIN ST	025	LAW OFFICES	1	06/27/2019		
420 SO MAIN ST	025	MEDICAL OFFICES	1	06/27/2019		
450 SO MAIN ST	025	SOUTH MAIN APARTMENTS	1	06/27/2019		
465-475 SO MAIN ST	025	SCHOOLSIDE SQUARE	1	06/27/2019		
478 SO MAIN ST	025	COMPLETE FOOT CARE	1	06/27/2019		
500 SO MAIN ST	025	ALLSTATE INSURANCE	1	06/27/2019		
831 SO MAIN ST	025	SUNOCO GAS STATION RENOVATION	1	08/20/2019		
849-2 SO MAIN ST	025	DOWLING FORD AUTO BODY GARAGE	1	06/27/2019		
850 SO MAIN ST	025	MCDONALDS RESTAURANT	1	01/30/2019		
851 SO MAIN ST	025	FORMER THOMASTON FEED	1	01/30/2019		
882 SO MAIN ST	025	DOLLAR TREE	1	01/30/2019		
905 SO MAIN ST	025	CVS	1	01/30/2019		
906-914 SO MAIN ST	025	SHOPPING PLAZA - ROSE DAIRY	1	01/30/2019		
922 SO MAIN ST	025	RITE AID	1	01/30/2019		
925-969 SO MAIN ST	025	CHESHIRE SHOPPING CENTER	2	07/19/2019		
940 SO MAIN ST	025	CL&P TRANSFORMER STATION	1	01/30/2019		
944 SO MAIN ST	025	DRAGON BUFFET	1	01/30/2019		
960 SO MAIN ST	025	VACANT	1	01/30/2019		
975 SO MAIN ST	025	WEBSTER BANK	1	01/30/2019		
986-1 SO MAIN ST	025	CONSTRUCTION	1	01/30/2019		
986-2 SO MAIN ST	025	CONSTRUCTION	1	01/30/2019		
2 WATERSHED SURVEY	025	RAILS TO TRAILS	1	03/14/2019		

WATERSHED: SOUTH CHESHIRE

TOTAL:

Total Number of Sites Inspected:	58	Total Number of Inspections:	72
Number of Sites With Violations:	0	Total Number of Violations:	0
Number of Sites Not Remedied:	0	Total Violations Not Remedied:	0

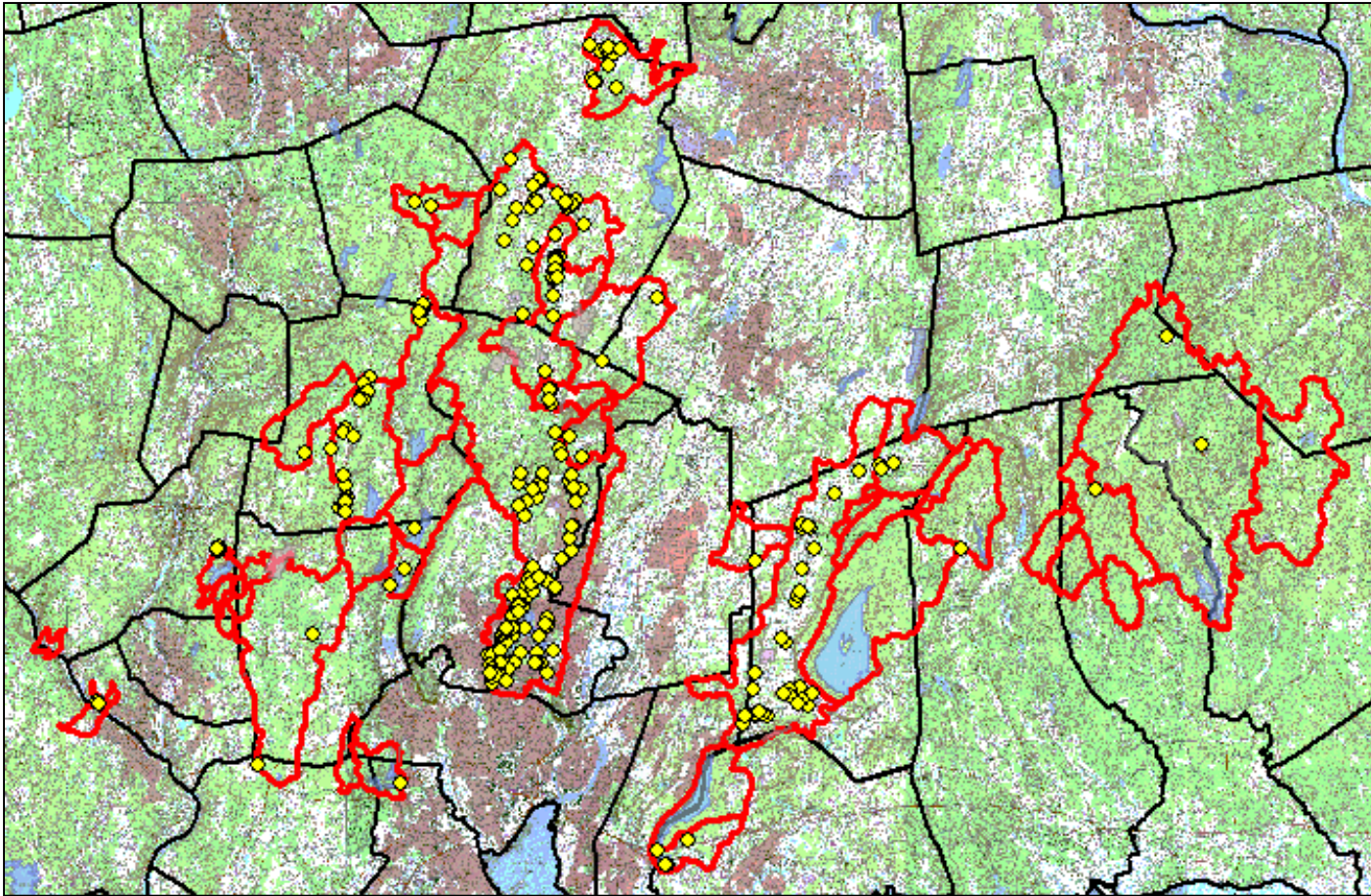
Crystal Reports

- Watershed application talks to Crystal Reports
- CR displays entered inspections
- Ability to narrow down results
- Can only find notes/comments in application

GRAND TOTALS :

Total Number of Sites Inspected:	646	Total Number of Inspections:	756
Number of Sites With Violations:	7	Total Number of Violations:	12
Number of Sites Not Remedied:	2	Total Violations Not Remedied:	3

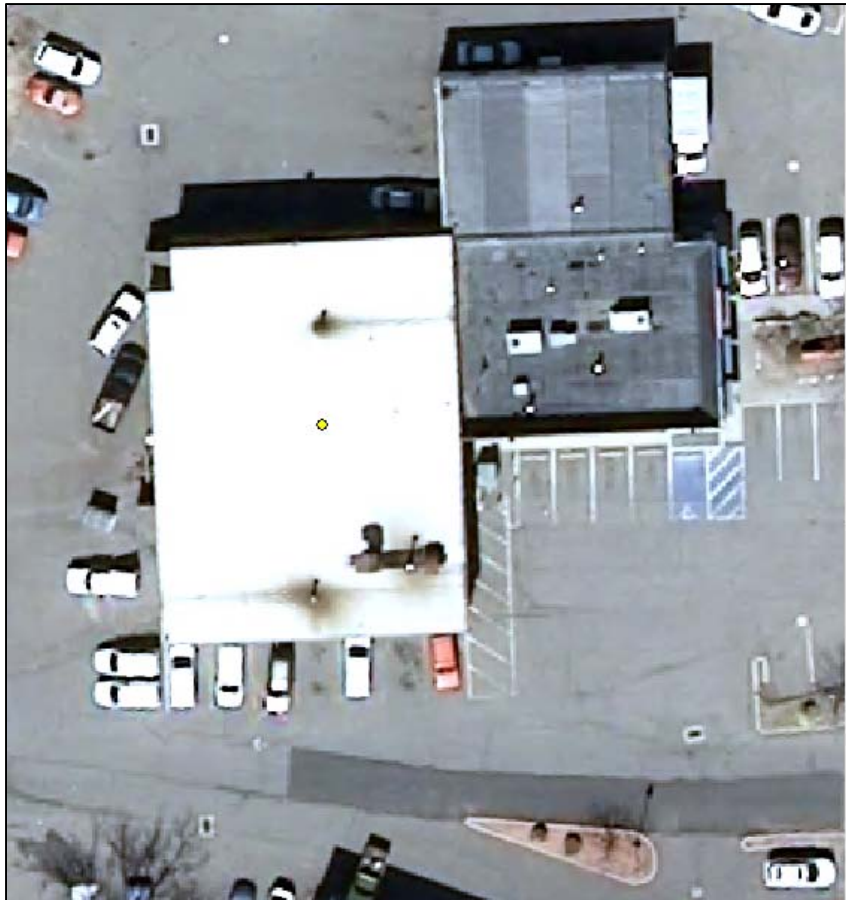
Using GIS to Track and Document High Risk Sites



Over 280 High
Risk Sites



High Risk Site: Example




Field	Value
Location:	957,080.251 734,643.955 Feet
Watershed/AQ	South Cheshire
Water_Syst	Mill River
Town	Cheshire
Shape	Point
Poten_PFOS	Tier 2
OBJECTID	240
Historic	
Hazards	Bulk fuel storage, chemical storage, detailing
FID	194
Dis_to_Sou	.42
DESCRIP	Vehicle sales, garage, autobody, service
Business	Dowling Ford
Address	1011 South Main St

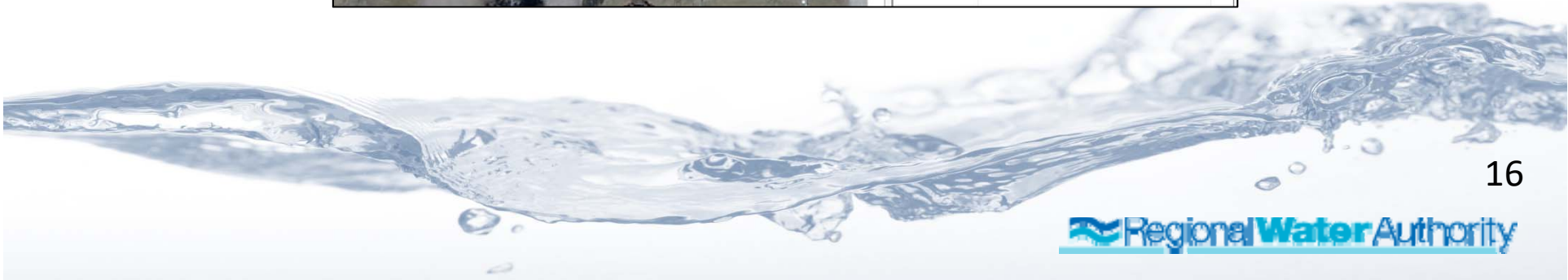
- Interactive
- Ability to manipulate
- Can export as excel file
- Utilize layers (contour lines, waterways)
- No access to GIS, Use Google Maps/Earth



High Risk Site: Example 2



Field	Value
Location:	950,196.281 685,307.494 Feet
Address	14 Hamden park Dr
Business	Howard's Snacks
DESCRIP	Fried pork skins factory
Dis_to_Sou	.35
FID	229
Hazards	Bulk cooking oil use
Historic	Minor oil into sewer from equipment washing
OBJECTID	0
Poten_PFOS	Min risk
Shape	Point
Town	Hamden
Water_Syst	Mill River
Watershed/AQ	Whitney



CT Department of Public Health (DPH)
Drinking Water Section (DWS) Circular
#2018-20

- September 27, 2018
- Required amended Water Supply Plan land use inventory to include potential PFAS generators
- Due to DWS by March 31, 2019
- Potential PFAS generator inspections in CY 2019-2020
- Recommended water sampling



Source Water Protection Committee



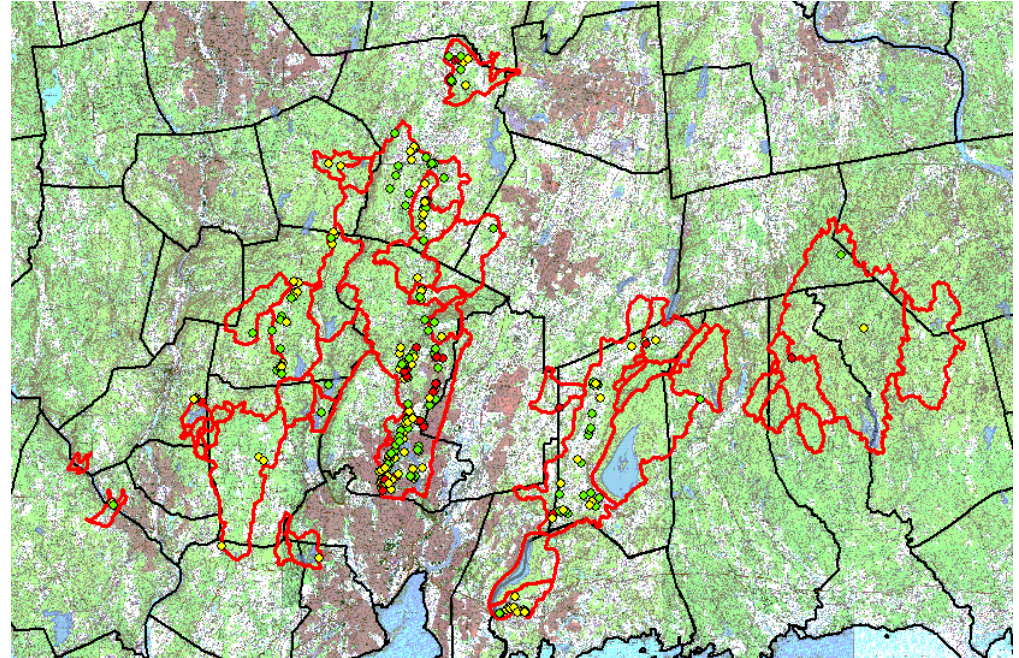
- AWWA, CT Section
- Potential PFAS generator form
- Tier 1, Tier 2, minimal/undetermined risk
- Statewide template

PFAS CONTAMINATION RISK ASSESSMENT					
SYSTEM:			AQUIFER/WATERSHED:		
PWSID#:			SANITARY RADIUS:		
LOCATION:					
Potential Contaminant Source	Description	Distance To Source	Tier 1	Tier 2	No Risk*
Military Base					
Airport					
Fire Training					
Landfill					
PFAS Industry*					
Car Wash					
Gas Station					
Auto Repair					
Fire Dept.					
Past History					
Septic					
Sewer					
Tier 1 Risk includes:	manufacturing facilities (high volume and concentration of PFAS depending on the product being manufactured) military bases, airport, and fire training facilities (specifically the PFAS contained in AFFF firefighting foams) landfills (a broad spectrum of PFAS due to the variety of products disposed)				
PFAS Industry*	= Known Industries/Manufacturers that MAY use PFAS Chemicals (Refer to ITRC fact sheet)				
Tier 2 Risk includes:	fire houses (not fire training sites), car washes, gas stations, auto repair, major septic systems, etc.				
*No risk	*No risk detected, probability of PFAS contamination unlikely based on land uses in the area.				
COMMENTS:					



RWA's Approach

- Used GIS instead of state-wide form
- Pre-existing data: GIS high risk site layer
- Addition of potential PFAS generators
- Classified to tier 1, tier 2 and min/undetermined risk



Water_Syst	Watershed/AQ	Town	Address	Business	DESCRIP	Hazards	Poten_	Dis_
NC Aquifer	NC Aquifer	Cheshire	108 Blacks Rd	Blossom View Landscaping	Landscaping and tree company	Earth material storage and mulch dyn	No risk	.53
Mill River	North Sleeping Giant	Hamden	4133 Whitney Ave	Commercial strip mall	Low hazard businesses and office space	Commercial septic system	Tier 2	.14
Peat Swamp	Peat Swamp	Seymour	132 Silvermine Rd	Larry's Autoparts	Vehicle parts and repair	Vehicle repair/ chemical storage and	Tier 2	.38
Peat Swamp	Peat Swamp	Seymour	132 Silvermine Rd	Falciono & Nu Age Design	Auto repair/ Screen printing and vehicle wrapping	Chemical use/ storage	Tier 1	.39
Peat Swamp	Peat Swamp	Seymour	132 Silvermine Rd	Topline Landscaping	Vehicle/ Equipment storage & repair	Minor fuel storage/ equipment repair	No Risk	.43



Alternatives to advanced technology

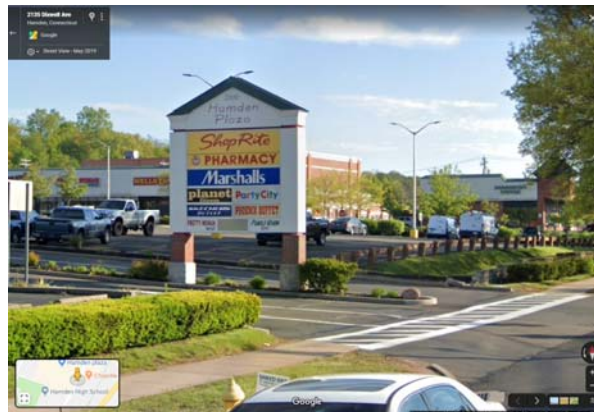
Excel spreadsheets

- ✓ Same functions as watershed app and Crystal Reports
- ✓ Use tabs for years



Google Maps, Bing Maps

- ✓ Street view
- ✓ Company names, websites
- ✓ Measuring tool



Google Earth

- ✓ Past aerials
- ✓ Ability to manipulate maps

